

Student Evaluations of Recyclable Materials Collections in University-Owned Residence Halls
at The Ohio State University

A Senior Honors Thesis

Presented in Partial Fulfillment of the requirements for graduation with distinction in Family
Resource Management in the College of Human Ecology at The Ohio State University

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November 2005

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THE OHIO STATE UNIVERSITY
COLLEGE OF HUMAN ECOLOGY
HONORS PROJECT ABSTRACT

Student Evaluations of Recyclable Materials Collections in University-Owned Residence Halls
at The Ohio State University

This undergraduate honors project examined recycling knowledge, perceptions, attitudes, and behaviors of Ohio State University students living in university residence halls. The main purpose of the project was to answer the following questions as they relate to undergraduate students living in residence halls at OSU:

1. What requisite knowledge do these students have about recycling procedures at OSU?
2. What perceptions do these students hold in regard to the recycling program at OSU?
3. What level of satisfaction, in regard to the recycling program at OSU, do these students report?
4. What would further motivate these students to improve their participation in the recycling program at OSU?

An on-line survey was conducted of students who served as Resident Advisors (RAs) of OSU residence halls during the 2004-2005 academic year. Focus group research was conducted with other students that live or have lived in residence halls.

Findings in relation to the four main questions posed by this research include:

1. Many RAs lack general knowledge vital to participation in the recyclable materials collection in residence halls.

2. There is a strong perception among RAs that recyclable materials placed in recycling collection containers on OSU campus do not actually get recycled.
3. The sentiment among research participants was that they are not satisfied with the program.
4. Students who participated in the survey and the focus groups noted that they would be more likely to recycle if bins were better labeled and in more convenient locations. RAs responded that they would be more likely to recycle if they knew the items were actually being recycled. Student residents felt they would be more likely to recycle if the items placed in recycling bins, such as alcoholic beverage containers, would not reflect negatively upon them.

The study underscored the need for an education program on recycling for OSU student residents. Information on what can be recycled on campus, where items can be recycled, and what happens to items after they are placed in bins could be helpful. In addition, more convenient placement of bins as well as better labeling of bins may create a more efficient program.

Contents

Introduction

Recycling in Ohio: The State of Potential.....	8
Statement of Main Purpose.....	9

Literature Review

Current Status

RecycleMania 2005: Ohio Schools Compete.....	10
Ohio's University Recycling Programs: A Closer Look.....	12
The Ohio State University: A Whole New Can of Worms.....	13

Benchmark Research

How to Improve a Recycling Program: Research at Other Educational Institutions.....	18
A New Focus: Recycling Focus Group Research.....	19
Discussion.....	22

Project Purpose and Timeline

Methods.....	23
Survey Purpose Statement.....	23
Focus Group Purpose Statement.....	24
Project Timeline.....	25

Survey Results.....27

Focus Group Results.....32

Discussion of Research Results.....35

Recommendations.....38

Limitations.....	41
Appendix A: Survey Invitation.....	42
Appendix B: Survey Instrument (Text Version)	43
Appendix C: Survey Instrument (Online Format) Key.....	49
Appendix D: Survey Participant Responses.....	54
Appendix E: Focus Group Invitation.....	60
Appendix F: Focus Group Script.....	61
References.....	65

“Nothing is inherently Trash.”

-Susan Strasser

Introduction

Recycling in Ohio: The State of Potential

A study of Ohio's waste conducted by the Ohio Department of Natural Resources (ODNR) at fourteen landfill and transfer stations across the state showed that more than 60 percent of the residential and commercial waste going into Ohio landfills could have been recycled (ODNR "What's In Our Garbage Study,"). The study, initiated by the ODNR's Division of Recycling & Litter Prevention (DRLP), confirmed the division's belief that considerable amounts of recyclable materials are being sent to landfills every day in Ohio.

With the release of this news, 37 daily newspapers across Ohio printed stories about the study, according to Kelly Armfelt, former Public Awareness Manager for DRLP. One of several stories that were to appear about the study in the *Columbus Dispatch* during January was written by Joe Blundo and printed on January 13, 2005. The story includes information on the Franklin County landfill, a 363-acre facility located in Jackson Township. "At the rate we're tossing trash (943,000 tons in 2004), we will fill all 363 acres in about 25 years," Blundo writes. Those 943,000 tons were just trash thrown into the 1,010 foot high Franklin County Landfill. Hundreds of thousands of more tons of garbage are buried in other landfills across the state every year.

In 25 years, where will Franklin County locate the next landfill? Will people have to live near it, smell it, or see it on their daily commutes? What will be done with the old landfill? Will it be just left there as it is? Will we continue to dig new holes in the ground every few decades, in which to bury our trash, for all eternity?

Many Ohio landfills have a shorter lifespan than the one in Franklin County. With 41 currently licensed Municipal Solid Waste Landfills, 58 currently licensed Municipal Solid Waste Transfer Stations, and 60 closed or deregulated solid waste facilities, no one in Ohio lives too far

from a Municipal Solid Waste Facility (Ohio EPA website).

One segment of the population that should be especially concerned with waste disposal issues is college students. College students are going to have to live with the effects of current waste disposal practices throughout the rest of their lives. With the life expectancy in the United States currently at 77.3 years, according to the National Center for Health Statistics, college students in their twenties will live long past the current expected life spans of many Ohio landfills. College students are also a transient population. Many students move every year, eat several fast food meals a week, buy disposable consumer products, and thus produce significant amounts of waste.

Ohio has more than 150 degree-granting institutions, enrolling more than 575,000 students, according to the Ohio Board of Regents. The State is also home to The Ohio State University, one of the largest universities in the country. With that many students in Ohio, college students have the power to make a large difference in the composition of Ohio's waste stream, thus it is worthwhile to spend some time reviewing efforts to divert waste at colleges and universities from landfills.

Statement of Main Purpose

The purpose of this undergraduate honors project was to examine the recycling knowledge, perceptions, attitudes, and behaviors of members of the Ohio State University (OSU) community. The project was focused on OSU students living in on-campus residence halls. As members of the OSU community living on campus, it can be assumed that these students dispose of significant amounts of waste while on university property. Thus, students have a large impact on the university's waste stream. By limiting this project to a well defined subgroup of the OSU

population, it will be possible to make specific statements on how to improve the recycling participation of this group of students.

The main purpose of this research project was to answer the following questions as they relate to undergraduate students living in residence halls at OSU:

1. What requisite knowledge do these students have about recycling procedures at OSU?
2. What perceptions do these students hold in regard to the recycling program at OSU?
3. What level of satisfaction, in regard to the recycling program at OSU, do these students report?
4. What would further motivate these students to improve their participation in the recycling program at OSU?

Literature Review

Current Status

RecycleMania 2005: Ohio Schools Compete

One indicator of interest and participation in recycling among university students is RecycleMania, a yearly competition scheduled over ten weeks to determine which university recycles the most: “Over a ten-week period, schools compete to see which institution can collect the largest amount of recyclables from residence halls, on-campus apartments and dining halls” (RecycleMania website). The competition started in 2001 as a grudge match between Miami University and Ohio University. Word of the competition spread and more schools wanted to get involved. The 2005 competition included 47 schools from across the country. Miami University in Oxford, Ohio, won the Per Capita Classic Competition of RecycleMania in both 2004 and 2005. A color photo of a proud Miami University student and the prize the University won, a sculpture made from reused items appeared in the Columbus Dispatch.

The 2005 competition also included a Recycling Rate Competition in which colleges and universities competed based on the percent of all university waste that was recycled. Institutions could elect to participate in one or both competitions.

Ohio was well represented in the 2005 competition with five schools participating in at least one of the two competitions. In the classic competition, out of 34 schools, the Ohio schools fared well. The results of the Ohio schools can be seen in the following chart.

RecycleMania 2005		
Per Capita Classic Competition		
Place	School	lbs. recycled per student
1	Miami University	66.19
3	Bowling Green State University	55.77
5	Ohio University	50.8
28	The Ohio State University	18.01

Source: RecycleMania www.recyclemaniacs.org

Three Ohio schools finished among the top five schools. This was obviously a very impressive showing. The Ohio State University finished in 28th place out of 34, with only a total of 18.01 pounds being recycled per student over a ten week period.

Only two Ohio schools participated in the Recycling Rate Competition. Ohio University and Youngstown State University both finished about the middle of the pack with 28.44 percent and 26.37 percent, respectively, of the schools waste stream being recycled (RecycleMania website).

The five Ohio Universities mentioned here all have well established recycling programs.

Simply having a recycling program is an accomplishment. Only about half of the higher education institutions in Ohio currently have a recycling program, according to Larry Cooper, college and university recycling coordinator for DRLP.

Ohio's University Recycling Programs: A Closer Look

Information about the Miami University recycling program (found on the university website at <http://www.pfd.muohio.edu/recycling>) includes data on the amount of items recycled and energy saved by recycling at the university. For example, on April 17, 2005, the webpage noted that the university estimated that 50 pieces of paper were placed into a recycling bin on the campus every minute. The website is also frequently updated with newspaper articles written on the university recycling program. There were 21 news articles written about recycling at Miami University during the 2004-2005 school year alone.

According to statistics obtained from RecycleMania, the Miami University recycling program began in 1989. The program now serves a total campus population of 22,000. The university has 97 on-campus buildings and boasts a self-reported recycling rate of 50 percent.

The Miami Recycling program employs students to oversee and promote the recycling program. Each student employed by the recycling program oversees the recycling process at a few buildings on campus. Miami University students are competitive in regards to their recycling program and push to promote recycling in the media.

The Ohio University recycling program is lead by the university recycling coordinator, Ed Newman. Newman helped create RecycleMania, is very active in the national College and University Recycling Coalition, and is determined for his program to be a benchmark.

According to Larry Cooper, "Ohio University is one of the top programs in the state, if

not the best. Ed Newman is like a kamikaze, he'll go through walls to recycle,” (The Ohio University website).

Innovative ideas have come out of other Ohio school recycling programs. Bowling Green State University charges their students two dollars per semester to go directly toward their recycling program. Youngstown State University is currently conducting a survey about their recycling program on their website. The survey is aimed at identifying the level of awareness of the university community regarding different facets of the recycling program. The survey, located at <http://www.yzu.edu/recycle/survey.html>, asks questions like: “Do you know that there is a confidentiality agreement with our paper vendor for all confidential papers recovered that will be recycled?” and “Are you satisfied with the level of assistance provided by the YSU Recycling Dept.?”

Every university is different, and no recycling program will work exactly the same at each institution. Factors affecting the differences in programs can include location, degree programs offered, student living arrangements, enrollment numbers, etc.

The Ohio State University: A Whole New Can of Worms

The Ohio State University (OSU), located in Columbus, Ohio, is one of the largest higher education institutions in the country. The university had a main campus student enrollment of 50,995 students for autumn quarter 2004, thousands of employees, and 424 buildings (OSU Office of Institutional Research and Planning). The size of the campus, and the extent of services required to meet the needs of a diverse range of people and buildings on campus, makes it difficult to easily compare OSU to any other school in the state. For example, Ohio University has a student population of about 23,500 students and 200 buildings on campus, and Miami

University has about a 22,000 student population and 97 buildings on campus (RecycleMania website).

Clearly, OSU is much larger and thus has the potential to encounter a larger number of obstacles when creating a recycling program. OSU has many buildings in which to establish and maintain recycling bins and recycling loading docks, old and new buildings with different loading dock/waste pickup capabilities, a large housekeeping staff to train regarding the process of collecting and proper placement of recyclables, and a much larger university community needing education on the importance of recycling and how to recycle on-campus. In fact, due to some of these variables, the recycling programs vary greatly among OSU residence halls. In addition to comparing OSU to schools in Ohio, it may also be beneficial to compare OSU to benchmark schools with large enrollment figures.

The OSU recycling program is administered by the Department of Physical Facilities, Division of Roads and Grounds. According to the Physical Facilities website, “OSU has been recycling in some capacity since 1964.” In 1993, a recycling coordinator was hired by the university and the program was built progressively during the ten years that a recycling coordinator was employed. The recycling coordinator left in 2003 and the position was vacant for two years. The university hired a new recycling coordinator in April 2005.

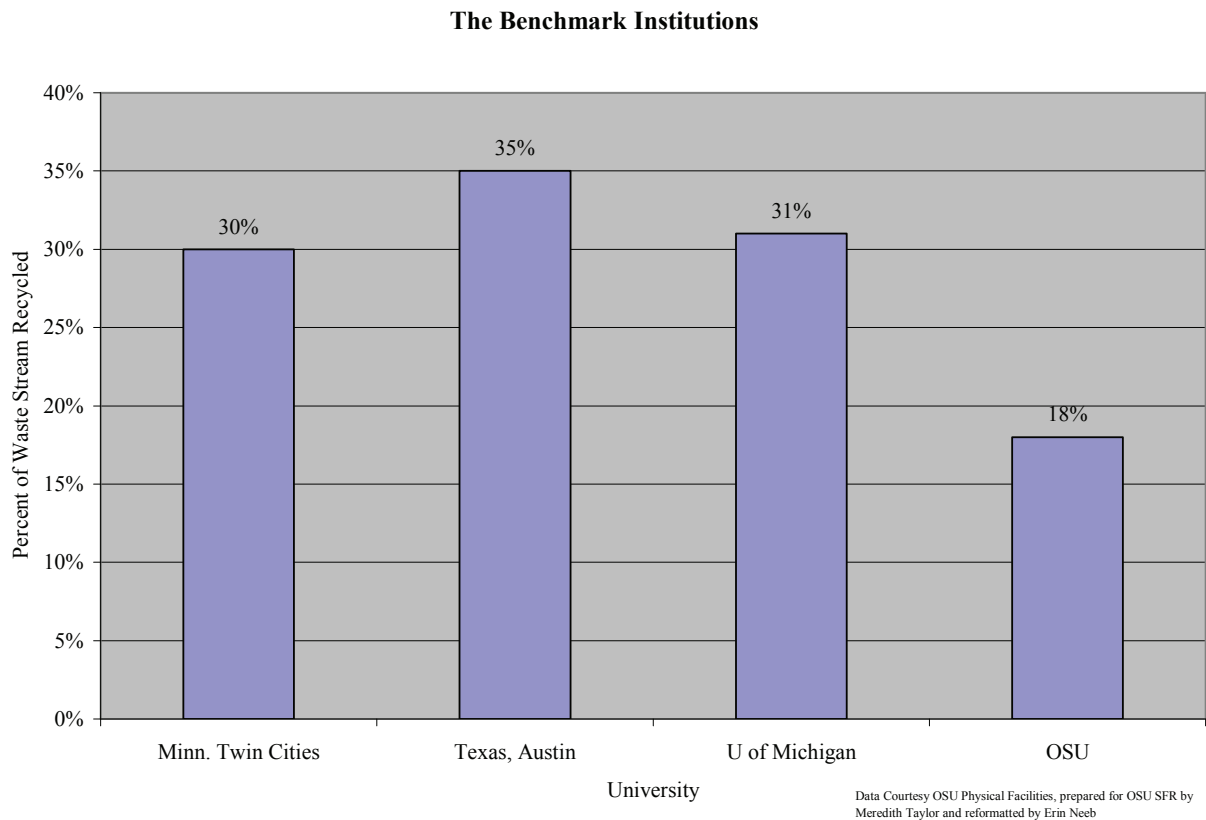
The program has stagnated for the past few years. In 2002, the percent of the waste stream recycled was 16.9. The recycling level rose a modest amount in 2003, to 17.7 percent and then grew very little in 2004, with a rate of 18.0 percent (OSU Physical Facilities).

OSU sees a return on investment from the recycling program. For example, landfill fees are avoided when items are recycled. The more materials that are recycled, the more the university saves from fewer items needing to be hauled to the landfill. In 2003, the university

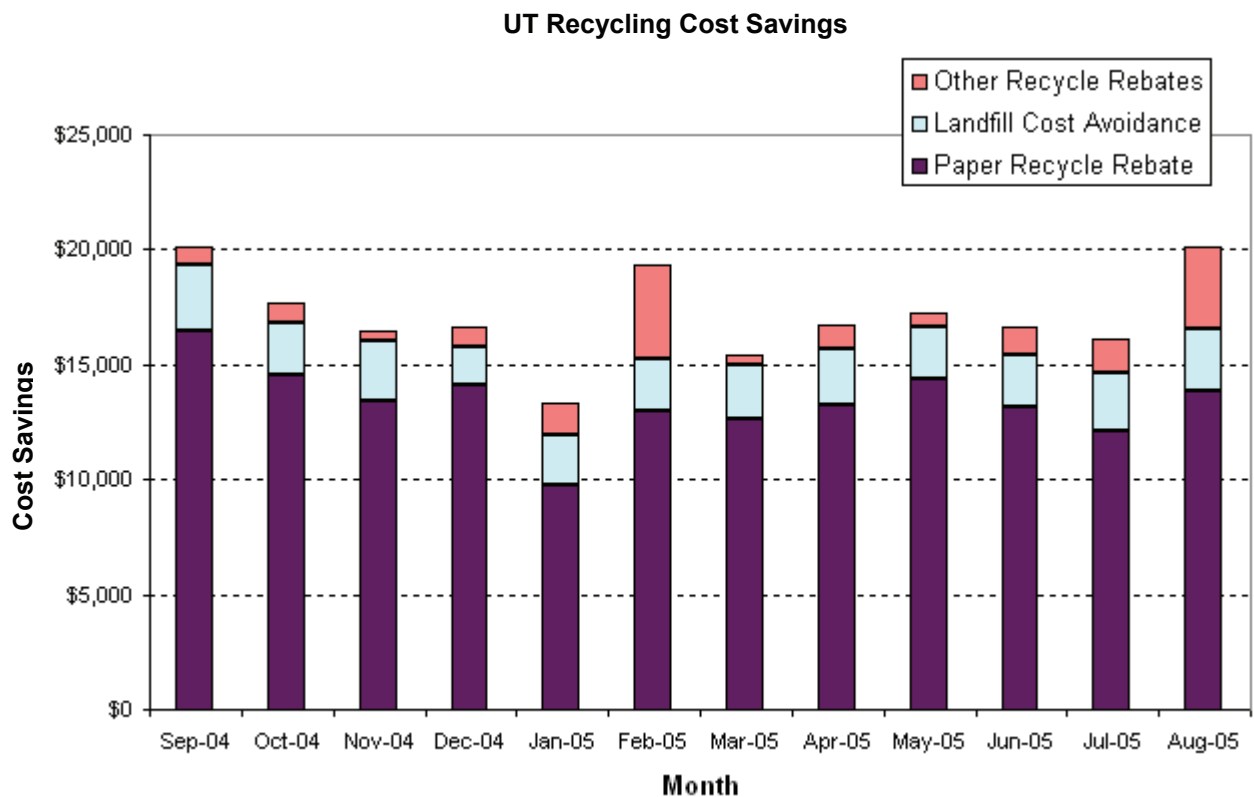
avoided \$65,338 in costs from recyclable materials being diverted from the landfill. The university also receives revenue from recyclables. In 2003, OSU received \$39,000 in rebates from the recycling program. Thus, in 2003, the recycling program saved the university a total of \$107,000 (OSU Physical Facilities). [Note: This savings total does not take into account recycling bins purchased for OSU or employee hours spent collecting recyclables. It is also interesting to note, however, that money earned from the recycling program, \$39,000 in 2003, does not go directly back into the recycling program. The money goes into the general Roads and Grounds budget and can be spent on any operating costs.]

OSU Students For Recycling (SFR), a student activist group in support of recycling on campus, estimates, by extrapolating available data, that if the university recycling program were to reach a 40 percent rate of waste stream recycling, the university would reap a total savings of \$259,310 a year (information obtained from OSU Physical Facilities in a report prepared for SFR by Meredith Taylor).

Compared to other universities, with student enrollment figures of a similar size, OSU's program recycles a smaller percent of the waste stream, by weight. The University of Minnesota, Twin Cities; the University of Texas at Austin; and the University of Michigan, all have student enrollments of at least 40,000 individuals and all have recycling rates of at least 30 percent (information obtained from OSU Physical Facilities in a report prepared for SFR by Meredith Taylor). The following table graphically shows this information.



This chart shows the difference in the percent of the waste stream recycled at OSU compared to other large universities. The University of Texas at Austin recycles almost twice the percent of their waste stream that OSU recycles. The cost savings for the University of Texas at Austin are significant. Due to cost avoidance and rebates the university usually benefits between \$15,000 and \$20,000 a month according to the following graph from the University of Texas at Austin website.



The effectiveness of OSU's recycling program is far below that of other universities in Ohio like Miami University and Ohio University. The OSU program also falls short of programs at universities with similar sizes to OSU like the University of Texas at Austin and the University of Minnesota, Twin Cities. OSU has had some sort of recycling since 1964 (as above mentioned). This is far before many other universities began recycling. The University of Texas at Austin, for example only created their recycling program in 1993, according to the university's website. The University of Miami began recycling in 1989, as before mentioned. So OSU has even had a head start on other universities. Why is the OSU program not recycling at the same levels as the other universities?

Benchmark Research

How to Improve a Recycling Program: Research at Other Educational Institutions

In 1990, the University of Oregon (UO) distributed a survey to 4,625 faculty members and office employees of the university. The survey was about the UO recycling program, which at the time was simply a paper recycling program. The survey, reprinted at the right, was returned by 25% of the people to whom it was sent (Davis, 1).

The survey was focused on the service aspect of the recycling program. The survey asked questions about staff awareness of the paper recycling program, the convenience of the program, and desired changes to the program.

Responses to the survey provided useful information for the university resulting in the creation of the UO Campus

<u>Recycling Questionnaire</u>	
In an effort to assess the recycling efforts at the University of Oregon, it is important for all students, faculty, and state employees to voice their opinions and offer input on the future of recycling at the university. Please complete this questionnaire and return it to the address on the back side of this sheet.	
This information will be used as input in the reevaluation process of the existing recycling program. Your response and time are greatly appreciated.	
1. Are you aware of paper recycling on campus?	Y / N
2. How accessible is recycling to your work area? (Where are the bins, relative to you?)	
3. Do you feel the paper recycling program meets your needs?	Y / N
4. How would you rate the current paper recycling effort at the university?	
A) poor B) needs improvement C) adequate D) good E) excellent	
5. The paper recycling program is under reevaluation. Would you like to see the program continued at its present level?	Y / N
6. How would you like to see the program change?	
7. Would you be willing to empty your paper bins weekly into bins	
- on your floor?	Y / N
- in a central location in your building?	Y / N
8. What suggestions do you have to improve <u>recycling</u> efforts at the University of Oregon?	
9. Are you aware that 50% recycled and 100% unbleached, recycled paper is available through the University Printing Department and Campus Copy?	Y / N
10. Do you use recycled paper in your office?	Y / N
11. Given that recycled paper is more expensive (for the time being), would your department be willing to pay as much as	
- 25% more to use it?	Y / N
- 10 to 15% more?	Y / N
12. Comments:	
This survey was created by the University of Oregon and retyped here by Erin Neeb	

Recycling Program, according to Karyn Kaplan, UO Recycling Coordinator (Kaplan, 1).

Response to this survey led to the creation of a larger UO recycling program that now recycles most materials, not just paper. The recycling program boasts a 44 percent of the waste stream recycled rate (information obtained from OSU Physical Facilities in a report prepared for SFR by Meredith Taylor).

In 2002, the Massachusetts Institute of Technology (MIT) surveyed students, faculty, and staff of the institution. Although the results of this survey were not made publicly available, the survey instrument was attainable. The survey was seventeen questions in length and asked questions similar to those of the UO survey. The MIT survey was also riddled with random facts such as, “Did you know the average U.S. college student produces 640 pounds of solid waste each year, including 500 disposable cups and 320 pounds of paper?” (MIT, 1)

A New Focus: Recycling Focus Group Research

A focus group, a discussion oriented interview of just a few people at a time, led by a moderator, can generate in-depth opinions from participants. According to Madhavi Jayanthi and Janet S. Nelson, authors of *Savvy Decision Making: An Administrator's Guide to Using Focus Groups in Schools*, a focus group is a useful tool to use in a school setting. “Focus groups have an advantage over surveys and brainstorming groups because only in a focus group is it possible to understand the “Why?” behind the participants’ comments,” (Jayanthi and Nelson, 8). Focus groups can provide different information than a survey. Respondents who answer a question with a “yes” or a “no” get the opportunity to explain why, instead of just circling an answer and leaving the survey administrator to wonder why that response was chosen.

Attempts to locate reports of focus groups conducted at a college or university and focused on recycling were not successful, but some information about recycling focus groups

conducted in communities was found. Focus groups about recycling were conducted by Aceti Associates of Arlington, Massachusetts in association with Research International, in 2002. The focus groups were contracted by the City of Waltham, Massachusetts and funded by a grant from the Massachusetts Department of Environmental Protection.

During the study, four focus groups, each consisting of eight participants, were conducted. The focus groups were designed to address the following issues:

- . “Motivations regarding recycling behavior”
- . “Factors likely to influence higher participation levels in the recycling program”
- . “Knowledge regarding the City’s recycling program”
- . “Social expectations concerning recycling,” (Aceti Associates, 32)

Two of the focus groups were aimed at evaluating barriers to participation in the city’s curbside recycling program. The intent of the other two focus groups was to evaluate social marketing strategies of the city.

Key findings of this focus group research included;

- . “Most residents of Waltham recycle to improve the environment.”
- . “The frequency of collecting recyclables does influence most residents’ recycling behavior. The program’s more frequent weekly collection schedule led many recyclers to increase their recycling.”
- . “Both recyclers and non-recyclers recommend that designing a bin that is higher, holds more, has a lid, and is on wheels or has sturdy handles would lead more Waltham residents to recycle.”
- . “Overall, residents who recycle and those who do not are satisfied with the information Waltham provides to them about its recycling program.”
- . “Both recycler and non-recyclers are generally knowledgeable about materials that can/cannot be recycled.”
- . “Some recyclers state that residents would recycle more or even begin to recycle if the city informed the residents of specific products - both consumer and those used by the city - that were made from recycled materials.”
- . “Similarly, recyclers and non-recyclers are knowledgeable about yard waste that can/cannot be recycled.”
- . “Although neither recyclers nor non-recyclers feel outside pressure to recycle, a small number of non-recyclers feel a bit ‘guilty’ about not recycling,” (Aceti Associates, 33).

The focus group findings from the City of Waltham state that knowing which items are

recyclable is not a problem there. Another item of interest included was the results of the main reason people in Waltham recycle, which is to improve the environment and that they don't feel outside pressure to recycle. Logically, one might think that most of the non-recyclers would report feelings of guilt regarding their lack of recycling efforts. That was not the case. However, it is interesting that residents would like the city to inform them of items that they can purchase, or that the City uses, that are made from recycled content.

Another recycling focus group study was conducted by The Evans McDonough Company (EMC). The research was contracted by Alameda County, California. During May 2003, EMC held two focus groups. "These mixed-gendered groups were held among decision-makers about waste management and recycling for their community," (EMC, 2). One of the groups consisted of community waste management decision-makers who did recycle, while the other group was composed of community waste management decision-makers who did not recycle.

Some of the key findings included:

- . "Currently, waste disposal and environmentalism are not top concerns for businesses," (EMC, 3).
- . "There is a will to contribute to the solution," (EMC, 3).
- . "Cost is the main factor in waste disposal," (EMC, 9).
- . "Significant and measurable returns on the investment must come quickly to justify the initial cost outlay of environmental improvements," (EMC, 9).
- . "Janitorial services may be the weak link in the recycling chain," (EMC, 12).
- . "Advice on placement of recycling containers appeals only to a small subset of companies," (EMC, 24).
- . "There was disagreement over how best to get people's attention," (EMC, 33).

These focus group findings are very interesting in comparison to the findings from the City of Waltham. The EMC research was conducted with waste management "decision makers," rather than regular residents. The results of this study focused more on costs, returns on

investment, and janitorial services.

Discussion

The knowledge gained from this literature review proved helpful in creating a study that was then conducted at OSU. The surveys conducted at UO and MIT provided a foundation for developing questions useful for the OSU setting. Questions asking OSU community members which items on campus are recyclable showed what requisite knowledge they have of the program. Questions asking participants to rate the recycling program revealed their satisfaction level.

The UO and MIT surveys were sent to staff; the OSU study differed as students were the chosen participants. Therefore, some questions about use of recycled paper or purchasing practices were not applicable. It would be interesting to send this completed study through the administrative ranks to see if it could help the current recycling program as at UO.

Surveys can lead to good statistics that can be used in proposals to change current recycling programs; however, they can be difficult instruments for respondents to convey in-depth ideas. This is why focus groups were also needed to fulfill some of the main objectives of this study.

Although many of the focus group findings outlined in the literature review may not directly apply to a university setting, such as findings about individuals' knowledge of yard waste, some of them could transfer over to a university application. Similar to the results of the City of Waltham study, perhaps university students would recycle more if they were supplied with a different bin (or even a bin at all, as residence halls at OSU do not have individual recycling bins for each room).

The Alameda County, California study was not directly helpful to creating a study of

OSU students as that research was conducted with waste management “decision makers.” It is possible, however, that results of this research could be comparable to what might come from a study of OSU administrators. Perhaps OSU decision-makers would say they will only improve the recycling program if they see a quick and substantial return on their investment; or janitors need to be trained better on their part in the recycling process; or that environmentalism is not a top concern for the university. Although these answers were not derived from this study, it would be interesting to see a future study with OSU “decision makers” as a companion to this research.

Project Purpose and Timeline

Methods

To answer the four main questions proposed of this research, an on-line survey was conducted of students who served as Resident Advisors of OSU residence halls during the 2004-2005 academic year. In addition, focus group research was conducted of other students that live or have lived in the residence halls.

Survey Purpose Statement

Conducting a study of students living in on-campus residence halls at OSU aided in answering the four main questions proposed by this project. These questions, introduced in the “Statement of Main Purpose” section are as follows:

1. What requisite knowledge do these students have about recycling procedures at OSU?
2. What perceptions do these students hold in regard to the recycling program at OSU?

3. What level of satisfaction, in regard to the recycling program at OSU, do these students report?
4. What would further motivate these students to improve their participation in the recycling program at OSU?

A survey provided quantifiable responses from students to help in answering questions 1-3. Focus group research was used to best answer question 4 with qualitative information. The focus group research is discussed in the next section.

The survey was conducted with Resident Advisors (RAs). According to the OSU Housing website, RAs are, “experienced Ohio State students who can help residents find the assistance they need on campus and create an academically supportive hall community.” RAs are successful upperclassmen that live in residence halls to provide guidance to other students. These students, as RAs, have knowledge of their residence hall and most likely have some knowledge of the recycling program in their residence hall or have some knowledge of the waste disposal habits of the students in their residence hall.

The survey, conducted at the beginning of autumn quarter, 2005, was sent to students that served as RAs during the 2004-2005 academic year. They were asked to answer the questions based on their experience in respect to the recycling program in the residence hall they lived in during the 2004-2005 academic year. The survey was administered on-line to provide easy access to participants. The survey provided good quantifiable data on the opinions of OSU RAs.

Focus Group Purpose Statement

Focus groups were used to address the main questions proposed by this project as they relate to undergraduate students (other than Resident Advisors) living in OSU residence halls. Focus groups provided an opportunity to gain in-depth opinions on recycling.

There were two focus groups, with a total of twenty participants (ten participants is considered a desirable size for a focus group, according to Jayanthi and Nelson, 45).

. One group was comprised of undergraduate students that have lived in the OSU residence hall that placed first in the OSU 2005 RecycleMania competition, or R1. The other focus group consisted of students that have lived in the OSU residence hall that placed last in the OSU 2005 RecycleMania competition, or R2. These separations were made to provide insight on the opinions of students living in a residence hall with a successful RecycleMania collection program, as well as the opinions of students living in a residence hall with a less successful RecycleMania collection performance. Having a commonality (i.e. all students in one focus group being undergraduate students that have lived in the same residence hall) can help to facilitate conversation.

Project Timeline

Fall Quarter 2004

- Secured project main advisor – a faculty member in the OSU College of Human Ecology.
- Secured second project advisor – a faculty member in the OSU School of Natural Resources.

Winter Quarter 2005

- Submitted honors declaration of thesis topic, abstract and thesis advisors to the College of Human Ecology.
- Applied for and received university funds for research.
- Contacted the College of Human Ecology webmaster, to obtain permission to use the Human Ecology website to administer a survey.

Spring Quarter 2005

- Conducted literature review.
- Wrote purpose statements for survey and focus group research.

Summer Quarter 2005 (and break between summer and fall quarters)

- Developed survey.
- Wrote a survey research invitation.
- Formatted the survey for a website.
- Decided on method to recruit focus group participants.
- Drafted a detailed script for the focus group discussions.
- Submitted application for research with human subjects to the OSU Office of Responsible Research Practices.

Fall Quarter 2005

- Decided on dates and times of focus groups and secured locations.
- Put survey on-line.
- Notified selected participants of on-line survey.
- Sent reminder e-mail to survey participants.
- Wrote a discussion and analysis of the survey findings.
- Recruited focus group volunteers.
- Decided on refreshments and secured gift certificates to compensate participants.
- Finalized details (i.e. secure audio device, name tags, any other last minute needs).

- Conducted first focus group - October 27.
- Analyzed results of first focus group.
- Conducted second focus group – November 3.
- Analyzed results of second focus group.
- Compiled all segments of the honors project.

Survey Results

There were 244 Resident Advisors (RAs) at the Ohio State University (OSU) during the 2004-2005 academic school year (see the “Survey Purpose Statement” section for an RA job description). Of those, 236 still had valid OSU e-mail accounts when this survey was administered (October 2005). The survey was completed by 21%, or 49, RAs. Of the residence halls on campus, 60% were represented by at least one RA that worked there filling out the survey. The survey instrument can be found in the appendices.

The survey asked respondents how they would rate the manner in which recyclable materials were collected in their residence hall. The majority of the responding RAs believed that the OSU residence hall recycling program needed improvement. On a scale of five or “excellent” to one or “poor” the average reply was 2.2 or just above “needs improvement.” In fact, 19 RAs chose to answer this question with a rating of “poor” while only one answered with a rating of “excellent.” Just 33% thought that the recycling program deserved a rating of “adequate” or higher

It should be noted that while RAs rated the residence hall recycling program as needing improvement, they were split as to whether the program was convenient or not. When asked, “Was the collection of recyclables in your residence hall convenient for you?” about half of the

students, 49%, responded that the collection of recyclables required a reasonable amount of effort. The other half felt that the program required too much effort. Since more than 49% of respondents felt the program needed improvement, there seemed to be reasons other than convenience limiting the program.

Plastic was the recyclable material most familiar to RAs; 71% reported knowing plastic could be recycled at OSU. Aluminum came in second with 59% of RAs reporting that it could be recycled. Mixed paper and newspaper both came in at 53%. Cardboard was the item least familiar to respondents; 41% reported that they knew it could be recycled on campus.

The next section of the survey asked the participants if they were satisfied with the way in which each of these materials was collected. A scale of five or “very satisfied” to one or “not at all satisfied” was used. The average responses given for each material were very consistent. Aluminum collection was given 2.4, while cardboard was given 2.1, and plastic, mixed paper, and newspaper were all given an average rating of 2.3. All of these rankings fall between “somewhat satisfied” and “not very satisfied,” falling closer to the latter. These similar satisfaction ratings of 2.3 for plastic 2.1 for cardboard seemed odd despite the fact that 71% knew plastic could be recycled and only 41% knew cardboard could be recycled. One might expect the satisfaction rating for cardboard collection to be much lower than that of plastic collection because most of the survey participants did not even know cardboard could be recycled in this program.

More than half of the respondents, 59%, felt that recyclables were not collected from their residence hall on a regular basis. This could mean that the RAs did not think the recycling collection to be consistent enough. This might be undermined by the fact only 49% of the participants reported personally participating in recyclable materials collections in their

residence hall. This leaves an uncertainty to how well these RAs could rate the recyclable materials collection program if they didn't participate in it.

The next question was, "When you place a recyclable item in a recycling bin on the OSU campus, do you feel confident that it actually gets recycled?" The vast majority, 80%, of the RAs replied "no."

The next section of the survey contained questions about the RecycleMania competition. The overwhelming majority of survey participants, 90%, were aware of this competition and 47% of total respondents reported participating in it. This 47% represents almost all of the 49% that participated in recycling at all in the residence halls. Most participating RAs promoted RecycleMania by putting up flyers and personally encouraging students to recycle. Most respondents guessed that their residence hall "collected fewer pounds per student than most other residence halls." Only seven RAs reported thinking their residence hall "collected more pounds per student than most other residence halls." Of these seven students, six of them were correct that the residence hall they lived in did perform better than average in the RecycleMania competition. It seemed as though most students knew whether their residence hall did well or not compared to the other buildings. This might have been because teams that did exceedingly well in the competition were given rewards such as pizza parties.

Finally, the two most detailed questions on the survey allowed room for students to type in responses. One request of the participants was to finish the sentence, "I would be more likely to recycle if..." after which several possible responses were listed as well as a blank to fill in any answers not listed. RAs were permitted to select as many responses as they desired. It appeared that the four things that would prompt the most respondents to recycle more would be if collection bins were located in more convenient locations (38 or 76%); if collection bins were

better labeled (26 or 53%); if they were sure their items were actually being recycled (14 or 29%); or if incentives were offered (10 or 20%). Of these four reasons, it was interesting to note that on another question 49% had indicated that recycling in the residence halls required a “reasonable amount of effort,” yet 76% still suggested that they would recycle more if collection bins were located in more convenient locations. It appeared that students would like things to be easier than “reasonable.” Also, the third of the four most indicated responses to this prompt was very intriguing because it was not a reason listed on which students could simply click. These 14 students actually took the time to type in statements indicating that they would recycle more if they knew the items were really being recycled. This fact, in conjunction with the earlier mentioned observation that 80% of participants noted not feeling confident that materials in recycling bins actually get recycled, showed that this may be a huge roadblock for the university in trying to increase the amount of recyclable materials collected. It should also be noted that five students typed in statements to the effect that there were not enough bins per building or there were not enough bins for each recycled material located in their building.

The last question was completely open ended. It asked students if they had any other comments. Over half (29) of the participants took the opportunity to fill in this question. The exact student responses to this question can be found in the appendices.

There were 11 RAs that typed in comments expressing concerns over needing better access to recycling collection bins. The comments ranged from needing just a larger quantity of bins in general to needing more (or any at all) of just a certain type of bin (for paper collection or beverage container collection). One participant commented, “I was not aware of any recycling in the building besides the bins in each floor’s trash room for aluminum.”

Another comment entered by 11 RAs was a reiteration of the negative responses given to

the question asking if they felt confident items placed in recycling bins on campus actually get recycled. Some of these students described seeing housekeeping staff toss recyclables in with regular trash when emptying the containers. Some students reported only hearing second hand that this was the case, but it was still enough to discourage them from putting items in the recycling bins.

Another issue on the minds of five respondents to this question was a belief that the university on a whole does not value the environment, and recycling in particular. One student wrote, “It seems like OSU does not value recycling very much on the whole. I find the lack of coordinated campus wide recycling education and facilities rather disappointing. I love OSU, but when it comes to being environmentally and sustainability minded, OSU is not nearly up to par with my personal values.”

It should also be noted that three students thought that the recycling bins needed to be emptied more often or on a more consistent basis. One student thought there should be more incentives to recycle, and one student believed that the recycling bins needed to be more clearly labeled.

Most of the OSU RAs that took part in this survey believed that the OSU residence hall recyclable materials collection program needed improvement. Some of the students thought requiring housekeeping staff to always separate materials collected from recycling bins from materials collected from regular garbage containers would be the solution. Some students felt that a greater amount of consistency in the program as far as providing the opportunity to recycle all materials available in every building, or having recycling bins emptied on a more regular basis would help the program. Another answer suggested by some RAs as a key to improving the collection process was to provide more education and awareness programs. Several survey

participants thought that just putting out more bins in locations more convenient to them would help. Although not all students offered the same solutions to improving the program, it was clear that they didn't find the program to be sufficient.

Focus Group Results

One focus group discussion was held with students that had lived in the residence hall in which the greatest amount of recyclable materials were collected during the 2005 RecycleMania competition, R1. Another discussion was held with students that had lived in the residence hall in which the least amount of recyclable materials were collected during the 2005 RecycleMania competition, R2. Although differences could be noted in the responses of the students from each residence hall, it seemed that almost all of the students were not averse to recycling; they just felt that there were barriers to further success of the recycling program.

When asked how they thought OSU as a whole felt about environmental issues, specifically recycling, one student said, "It is clear that OSU isn't ambivalent about it because there are recycling bins, it just seems that they don't do enough." Most of the focus group students implied that they felt the OSU residence hall recycling program could be improved. The addition of more bins and a stronger education program were ideas unanimously supported by the students.

Most students said that if they did not know whether an item was recyclable or not, they would throw it away rather than seek an answer or put the item in a recycling bin. When asked if they recycled at home before they came to college and if they recycled in college, more students reported recycling at their parent's homes than recycling in college. This showed that while most of the students were not unfamiliar with the concept of recycling and they or their families

supported it, they did not know how to go about the practice of recycling in their residence hall.

Most of the students felt that when they are told what is recyclable, they want it to be in simplistic terms. The students did not respond well to being told that plastics #1 and #2 could be recycled. They would rather be given examples of these materials, such as soda bottles and milk jugs. The students also came close to a consensus that images of recyclable items as well as text descriptions of items should be located on or near the bins in which they could be placed. For example, perhaps there could be recycling containers in the laundry rooms with signs showing a picture of a plastic bottle displaying the caption “detergent bottle” thus depicting to students that this receptacle would be a good place to put plastic containers such as those containing laundry aids.

The students in the focus group discussions believed that items placed in recycling containers on campus did get recycled. In fact, with the exception of one student, they all said that was something they had never given consideration to before.

A large point of concern that was brought up by these students that had not been mentioned by the RAs was that students want the things they are discarding to be kept private. The students felt that it was more likely that someone might look through their recyclables for incriminating evidence than through trash. I was clueless to this concern and then the students told me that they drank alcohol in their dorm rooms, they didn’t want anyone to know, and they thought they would be more likely to get caught if they recycled. As there were recycling receptacles on each floor in R2, students told me that items found in those receptacles could be associated with students living on that floor. The students said they took their trash to the common building trash receptacles often so as to not get caught with anything in their room that should not be there and in doing this they tended to throw most everything away. R1, being a

small building, had most of their recycling receptacles outside. So anything placed in these containers would be very difficult to associate with any particular floor of students. It would be tough to associate these items with students from that building at all as any passer by could theoretically put items in those outdoor receptacles. So privacy in their waste disposal practices was not as much of a concern in that building.

A difference that could be noted between the discussion with students from R1 and R2 was that most of the R1 students asked had heard of the RecycleMania competition while only one of the R2 students had ever heard anything about the competition. It seemed odd that the R2 students were unaware of the competition when 90% of the RAs that participated in the online survey reported knowing of the competition.

The R2 students in the focus group discussion did not appear averse to recycling; it just seemed that they were clueless. When asked what she thought of the recycling program in R2, one student stated “I didn’t know there was one.”

To be fair, it should be noted that R1 was a much smaller residence hall than R2. R1 employed only one RA while R2 found the need for 20 RAs, when this research was conducted. A reasonable theory for the difference in recyclable materials collected per student might simply be that there existed a smaller and thus less complicated system for getting information to students in R1.

The students in the discussions made it clear that they were not opposed to recycling. If they were informed what materials could be recycled when they first moved into their residence hall and given assurance that putting items in recycling bins would get them into trouble no more than putting items in the trash, R2 students assured that their recycling program would improve.

Discussion of Research Results

Through the results of this research, it was possible to answer the four main questions outlined in the “Statement of Main Purpose” for the study. The first question, “What requisite knowledge do these students have about recycling procedures at OSU?” could be answered simply with “not enough to have an efficient recycling program.” For example, only 41% of RAs that participated in this research reported knowing that cardboard could be recycled at OSU. As the RAs had some authority in getting information out to students living in residence halls, the number of student residents that knew this material could be recycled on campus was probably similar. These numbers show that there was room for improvement as far as educating students on what items were recyclable at OSU.

It seemed that smaller residence halls, with fewer RAs to educate and to pass information on to students provides for a more efficient recycling program. There was a broken link of communication in the residence hall chain of command. While almost all of the RAs knew about the RecycleMania competition, a significantly smaller proportion of students knew about it. When almost all of the RAs knew about the competition, why didn’t almost all of the students? Perhaps the lapse in communication/education regarding recycling practices and procedures was in this link. It seemed that the RAs might have been getting information that they were not passing on to students. In fact, while 90% of the RAs knew about the RecycleMania competition, only 47% of them reported promoting it. There appeared to be a decision made on the part of the RAs as to whether they wished to promote this program to their students.

Another example of the lack of knowledge students had about recycling procedures in residence halls could be summed up by a student that participated in focus group research.

When asked what she thought about the recycling program in her residence hall, R2, she stated, “I didn’t know there was one.”

The second question that was to be answered by this research was “What perceptions do these students hold in regard to the recycling program at OSU?” A predominant perception among the RAs that participated in the survey was that recyclable materials placed in recycling collection containers on OSU campus did not actually get recycled. In fact, 80% of the RAs expressed a doubt that the materials got recycled. It is possible that this issue was simply a misconception by RAs. There could be a legitimate reason why housekeeping staff might mix recyclables and trash. Maybe they threw away bags taken from recycling bins if they saw the bin contaminated with garbage. Even if they were handling all materials properly, it was evident either they needed to behave differently in the presence of residents, or residents needed to understand what they were doing.

The students that participated in the focus group research did not report the same distrust of the program that the RAs did. It seemed that RAs were either let in on more details of the recycling program, or perhaps more fables about the program.

The focus group students spoke more of their perception that the program collection containers needed to be better and more consistently labeled. The students thought it difficult to know what materials were to be placed in which collection bins on campus.

In the online survey conducted, RAs were asked to rate the manner in which recyclable material was collected in their residence hall. On a scale of one to five, with five being excellent and one being poor, the average response was 2.2 or just above “needs improvement.” The RAs also reported satisfaction ratings on a similar scale for individual materials collected on campus. The average satisfaction ratings with the collection of individual materials ranged only slightly

from 2.1 for cardboard to 2.4 for aluminum. In combining this information with the responses given by students in the focus group research, who reported feeling the recycling program to be rather inadequate to meet their needs, it could be noted that the average sentiment among all participants was that they were not satisfied with the program.

One focus group participant from R2 said in reference to the residence hall recycling program, “It is clear that OSU isn’t ambivalent about it because there are recycling bins, it just seems that they don’t do enough.” This student perceived the university as caring, but not doing enough to meet student needs.

The final question posed in the preparation for this research was “What would further motivate these students to improve their participation in the recycling program at OSU?” Students that participated in the survey and the focus groups noted that they would be more likely to recycle if bins were better labeled and in more convenient locations. Students did discuss whether they would be more likely to recycle if provided a recycling bin in each room by the university. It seemed that for the most part, and especially for R2, their desire to not be associated with their recyclables outweighed the desire to have a bin in their room. This differed from the results of the City of Waltham study discussed in the Literature Review section, as residents there thought they would be more likely to recycle if the city provided community members with a bin.

Student residents felt they would be more likely to recycle if they knew items placed in recycling bins, such as alcoholic beverage containers, would not reflect negatively upon them. Perhaps a reassurance that placing items in recycling containers would no more incriminate students than putting them in trash containers would improve the amount of recyclables coming out of R2.

As discussed above, RAs responded that they would be more likely to recycle if they knew the items were actually being recycled.

It was clear that the majority of research participants were not averse to recycling; however, they felt the residence hall recycling program at OSU was inadequate to meet their needs. Many of the participants were very interested in this research and offered recommendations for improving OSU residence hall recycling.

Recommendations

I would recommend improvements be made to the OSU residence hall recycling programs, as students seemed to be dissatisfied with the present situation. As far as ways to improve recycling rates, I would suggest an education program, an improved line of communication, putting bins in different locations, and labeling bins in a different manner.

To combat issues such as a lack of knowledge about the program, a program to educate students about recycling procedures and what happens to items after they are placed in a collection bin could be helpful. The first day that students move into the residence hall, they are aided in getting items to their new room by teams of students. During the move-in process, these “student helpers” could quickly show new students where to dispose/recycle items such as their cardboard moving boxes, plastic bags, and other items they are likely to have with them. Student focus group participants suggested presenting information about recycling on campus to students during their first week in their residence hall as part of orientation. Information on how/what to recycle in their hall could be mentioned at the first hall meeting of the year. RAs could be supplied with preset e-mail reminders about recycling to send to students on a regular basis, especially if they notice students not properly disposing of items.

The lack of confidence that items placed in bins are actually recycled could be addressed by providing information on how much waste the university generates and how much is recycled. These figures could be sent to RAs/Hall Directors (the person(s) in charge of a residence hall) monthly or quarterly to pass on to students.

Increased recycling could be encouraged through competitions with other schools to invoke a sense of spirit in OSU recycling. For example, the OSU/Michigan rivalry could be used as a rallying point to encourage recycling. Michigan will be competing in RecycleMania for the first time in the 2006 competition. The fact that Michigan is competing could be used to promote the competition and increase the practice of recycling on campus.

The results of the study suggest that communication to students could be more effective. Possibly, it would be more effective if information related to recycling came straight from the Hall Directors. It could also be effective to make informing students on waste disposal options an aspect of the RA job description. If information regarding recycling is supposed to be given to student residents by RAs, the RAs need to be given a clear message that it is important to pass this information along to students.

Location and design of recycling bins was found to affect the participant's perception of the program. Collection of paper fiber is important because paper is the largest part of the waste stream in Ohio, as mentioned in the project introduction. Cardboard recycling containers meant only for paper could be placed in each room. Collection containers for bottles, cans, and cardboard could be placed on the ground floor of small buildings or on every other floor of tall buildings.

Improved labeling of recycling bins was another suggestion. If the university could place images of recyclable items along with their descriptions on or near recycling bins, the students

believed that they would recycle more. Some students respond better to visual cues. Providing both images and descriptions on or near recycling collection containers could satisfy more students.

It seemed that it would help if the university could have more consistency among the buildings. Although the vast differences among buildings eliminates the possibility of a uniform collection program, it should not be that residents can recycle only one type of material in one residence hall and two other types in another residence hall. A consistent manner in locating/labeling recycling bins as well as similar awareness programs so students would know what can be recycled in their building would create solutions to comments made by several students. Also a consistent manner in the way materials are collected could improve students' perception of the program. One possible solution was offered by a student in the following comment, "I think that there needs to be a bigger effort to make housekeeping staff comply with keeping recycled materials and trash separate." Perhaps the university could add language to the housekeeping contracts requiring staff to keep recyclable materials separate from other garbage while emptying receptacles.

While it may not be possible for the university to implement all of these suggestions at the present time, I feel that even putting one or two of these suggestions into practice would improve the program. Currently, the Solid Waste Authority of Central Ohio (SWACO) is funding a "site assessment" of the OSU recycling program. The results of the assessment, to be concluded by the end 2005, should give the university some ideas on how to more efficiently run the recycling program from building to building. This will be much needed information on how to run the program more smoothly.

Limitations

Limitations of the findings and ability to draw general conclusions from this project include limitations in information collected as background for the project. For example, no figures were available on the portion of the OSU waste stream that was generated in the residence halls or by students in general.

In addition, some of the questions asked of research participants may have exhibited bias. Questions were formulated based on research instruments used at other institutions and no testing of validity or reliability was performed.

Appendix A

Survey Invitation

An invitation for participation in the online survey was sent via e-mail on October 1, 2005 to all students that served as a Resident Advisor at OSU during the 2004-2005 academic year. The invitation contained the following text:

“Hello, my name is Erin Neeb and I am honor student in the College of Human Ecology. I am conducting research to learn how The Ohio State University can improve recyclable materials collections on campus. In an effort to assess the recyclable materials collection programs in the residence halls at OSU, the input of all Resident Advisors during the 2004-2005 academic year is important. Please complete the following survey to help in my research. The survey should not take long to complete and a \$10 gift certificate will be awarded to a randomly selected participant. Please be aware that participation in this survey is strictly voluntary and will not affect your status at the university. Your participation in this survey is appreciated.

To access the survey, please visit <http://hec.osu.edu/forms/recycling/>

The Principal Investigator of this research, Dr. Golden Jackson-Mergler, can be contacted at Jackson-mergler.1@osu.edu or (614) 292-4575.

The Office of Responsible Research Practices can be reached at (614) 688-8457.

Thank you,

Erin Neeb

neeb.4@osu.edu”

Appendix B

Survey Instrument (Text Version)

This survey is displayed in the way in which it was formatted to be used online in Appendix A. The text of the survey was as follows:

This survey is about recyclable materials collections in the residence halls at The Ohio State University. This survey is being conducted as partial fulfillment of an undergraduate honors project. Information provided in this survey will be kept confidential. Please only take into consideration your experiences in the residence hall in which you resided last year (2004-2005 academic year). Participation in this survey is completely voluntary and will in no way affect your status at the university. At the end of the survey, you will be asked to provide your e-mail address if you are interested in being entered into a drawing for a \$10 gift certificate. If you choose to enter your e-mail address, it will be submitted separately from your survey. Although every effort to protect confidentiality will be made, no guarantee of internet security can be given as transmissions can be intercepted and IP addresses can be identified.

In which residence hall did you work last year?

Baker Hall East	Baker Hall West
Barrett House	Blackburn House
Bradley Hall	Canfield Hall
Drackett Tower	Fechko House
German House	Halloran House
Hanley House	Haverfield House
Houck House	Jones Graduate Tower
Lincoln House	Mack Hall
Morrill Tower	Morrison Tower
Neil Avenue	Neilwood Gables

Norton House

Nosker House

Park Hall

Paterson Hall

Pennsylvania Place

Pomerene House

Scholars East

Scholars West

Scott House

Siebert Hall

Smith Hall

Steeb Hall

Stradley Hall

Taylor Tower

Worthington Avenue Building

Please indicate all recyclable materials that you were aware of being collected in your residence hall.

Aluminum Plastic Cardboard Mixed Paper Newspaper

From what you have seen, how would you rate the manner in which recyclable materials were collected in your residence hall?

1) Excellent 2) Good 3) Adequate 4) Needs Improvement 5) Poor

Were you satisfied with the way ALUMINUM was collected for recycling in your residence hall?

1)Very Satisfied 2)Satisfied 3)Somewhat Satisfied 4)Not Very Satisfied 5)Not At All Satisfied

Were you satisfied with the way PLASTIC was collected for recycling in your residence hall?

1)Very Satisfied 2)Satisfied 3)Somewhat Satisfied 4)Not Very Satisfied 5)Not At All Satisfied

Were you satisfied with the way CARDBOARD was collected for recycling in your residence hall?

1)Very Satisfied 2)Satisfied 3)Somewhat Satisfied 4)Not Very Satisfied 5)Not At All Satisfied

Were you satisfied with the way MIXED PAPER was collected for recycling in your residence hall?

1)Very Satisfied 2)Satisfied 3)Somewhat Satisfied 4)Not Very Satisfied 5)Not At All Satisfied

Were you satisfied with the way NEWSPAPER was collected for recycling in your residence hall?

1)Very Satisfied 2)Satisfied 3)Somewhat Satisfied 4)Not Very Satisfied 5)Not At All Satisfied

Were recyclables collected from your residence hall on a regular basis?

Yes No

Did you personally participate in the recyclable materials collection in your residence hall?

Yes No

Where did you have to take the recyclable materials in your building?

A central location in your building

A location on your floor

Other

When you place a recyclable item in a recycling bin on the OSU campus, do you feel confident that it actually gets recycled? Yes No

RecycleMania is a yearly competition in which universities compete to see which one can collect the most recyclable materials per student. The competition takes place over a ten-week period that begins in winter quarter and finishes in spring quarter. Not only did OSU compete in RecycleMania against other schools last year, but there was also a competition among certain residence halls on campus to see which one could collect the most recyclable materials per capita.

Were you aware of the RecycleMania competition last year? Yes No

Did you personally participate in the RecycleMania competition last year? Yes No

How did you promote the RecycleMania competition in your building last year? You may select more than one response.

By putting up flyers

By putting up promotional bulletin boards

By personally reminding the students in my residence hall to recycle

Another way

I did not promote the competition

Compared to other residence halls on the OSU campus that participated in RecycleMania, how do you feel that your residence hall compared in numbers of recyclables collected per student?

I would guess my residence hall collected more pounds per student than most other residence halls

I would guess my residence hall collected about the same number of pounds per student as the other residence halls

I would guess my residence hall collected fewer pounds per student than most other residence halls

My residence hall did not participate in RecycleMania

Please select one or more response(s) to complete the following statement. I would be likely to recycle more if:

I knew more about the benefits of recycling

Recycling collection bins were in locations more convenient for me

Recycling collection bins were better labeled

Incentives were offered for recycling

More of my friends recycled

My family recycled

Other, please explain

Was the collection of recyclables in your residence hall convenient for you?

Yes, I feel the collection of recyclables in my residence hall required a reasonable amount of effort

No, I feel the collection of recyclables in my residence hall required too much effort

Do you have any other comments?

Please enter your e-mail address if you are interested in being entered into a drawing for a \$10 gift certificate. Your survey and e-mail address will be submitted separately.

Thank you for taking this survey! Your time is appreciated.

The survey was located online at: <http://hec.osu.edu/forms/recycling/>

Appendix C

Survey Instrument (Online Format) Key

Survey Instrument

This survey is about recyclable materials collections in the residence halls at The Ohio State University. This survey is being conducted as partial fulfillment of an undergraduate honors project. Information provided in this survey will be kept confidential. Please only take into consideration your experiences in the residence hall in which you resided last year (2004-2005 academic year). Participation in this survey is completely voluntary and will in no way affect your status at the university. At the end of the survey, you will be asked to provide your e-mail address if you are interested in being entered into a drawing for a \$10 gift certificate. If you choose to enter your e-mail address, it will be submitted separately from your survey. Although every effort to protect confidentiality will be made, no guarantee of internet security can be given as transmissions can be intercepted and IP addresses can be identified.

In which residence hall did you work last year?

reshall

Please indicate all recyclable materials that you were aware of being collected in your residence hall.

aluminum - 1 ☐ Aluminum

plastic - 1 ☐ Plastic

cardboard - 1 ☐ Cardboard

mixed - 1 ☐ Mixed Paper

newspaper - 1 ☐ Newspaper

From what you have seen, how would you rate the manner in which recyclable materials were collected in your residence hall?

rate

5 ☐ Excellent

4 ☐ Good

3 ☐ Adequate

2 ☐ Needs Improvement

1 ☐ Poor

Were you satisfied with the way **ALUMINUM** was collected for recycling in your residence hall?

alumsat

- 5 ☐ Very Satisfied
- 4 ☐ Satisfied
- 3 ☐ Somewhat Satisfied
- 2 ☐ Not Very Satisfied
- 1 ☐ Not At All Satisfied

Were you satisfied with the way **PLASTIC** was collected for recycling in your residence hall?

plasticsat

- 5 ☐ Very Satisfied
- 4 ☐ Satisfied
- 3 ☐ Somewhat Satisfied
- 2 ☐ Not Very Satisfied
- 1 ☐ Not At All Satisfied

Were you satisfied with the way **CARDBOARD** was collected for recycling in your residence hall?

cboardsat

- 5 ☐ Very Satisfied
- 4 ☐ Satisfied
- 3 ☐ Somewhat Satisfied
- 2 ☐ Not Very Satisfied
- 1 ☐ Not At All Satisfied

Were you satisfied with the way **MIXED PAPER** was collected for recycling in your residence hall?

mixsat

- 5 ☐ Very Satisfied
- 4 ☐ Satisfied
- 3 ☐ Somewhat Satisfied
- 2 ☐ Not Very Satisfied
- 1 ☐ Not At All Satisfied

Were you satisfied with the way **NEWSPAPER** was collected for recycling in your residence hall?

newssat

- 5 ☐ Very Satisfied
- 4 ☐ Satisfied
- 3 ☐ Somewhat Satisfied
- 2 ☐ Not Very Satisfied
- 1 ☐ Not At All Satisfied

Were recyclables collected from your residence hall on a regular basis?

regbasis

- 2 ☐ Yes
- 1 ☐ No

Did you personally participate in the recyclable materials collection in your residence hall?

personal

- 2 ☐ Yes
- 1 ☐ No

Where did you have to take the recyclable materials in your building?

wheretake

- 3 ☐ A central location in your building
- 2 ☐ A location on your floor
- 1 ☐ Other

When you place a recyclable item in a recycling bin on the OSU campus, do you feel confident that it actually gets recycled?

confident

- 2 ☐ Yes
- 1 ☐ No

RecycleMania is a yearly competition in which universities compete to see which one can collect the most recyclable materials per student. The competition takes place over a ten-week period that begins in winter quarter and finishes in spring quarter. Not only did OSU compete in RecycleMania against other schools last year, but there was also a competition among certain residence halls on campus to see which one could collect the most recyclable materials per capita.

Were you aware of the RecycleMania competition last year?

rmaniaaware

- 2 ☐ Yes
- 1 ☐ No

Did you personally participate in the RecycleMania competition last year?

rmanipart

2 ☐ Yes

1 ☐ No

How did you promote the RecycleMania competition in your building last year? You may select more than one response.

flyers - 1 ☐ By putting up flyers

bboards - 1 ☐ By putting up promotional bulletin boards

reminder - 1 ☐ By personally reminding the students in my residence hall to recycle

anotherway - 1 ☐ Another way

didnotpromote - 1 ☐ I did not promote the competition

Compared to other residence halls on the OSU campus that participated in RecycleMania, how do you feel that your residence hall compared in numbers of recyclables collected per student?

rescompare

4 ☐ I would guess my residence hall collected more pounds per student than most other residence halls

3 ☐ I would guess my residence hall collected about the same number of pounds per student as the other residence halls

2 ☐ I would guess my residence hall collected fewer pounds per student than most other residence halls

1 ☐ My residence hall did not participate in RecycleMania

Please select one or more response(s) to complete the following statement. I would be likely to recycle more if:

knewbenefits - 1 ☐ I knew more about the benefits of recycling

convenient - 1 ☐ Recycling collection bins were in locations more convenient for me

betterlabel - 1 ☐ Recycling collection bins were better labeled

incentives - 1 ☐ Incentives were offered for recycling

morefriends - 1 ☐ More of my friends recycled

family - 1 ☐ My family recycled

likelyother - 1 ☐ Other, please explain

likelyexplain

Was the collection of recyclables in your residence hall convenient for you?

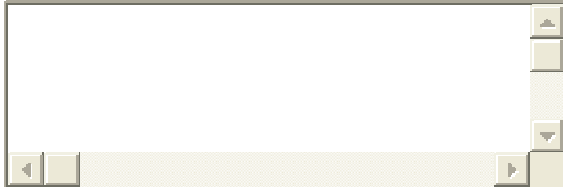
collectconvenient

2 ☐ Yes, I feel the collection of recyclables in my residence hall required a reasonable amount of effort

1 ☐ No, I feel the collection of recyclables in my residence hall required too much effort

Do you have any other comments?

othercomments



Please enter your e-mail address if you are interested in being entered into a drawing for a \$10 gift certificate. Your survey and e-mail address will be submitted separately.

Please click on the **Submit** button when you are finished.

Appendix D

Survey Participant Responses

This is a record of comments survey participants gave to the open ended question “Do you have any other comments?” Each bullet point denotes a new response. The following has been taken verbatim from participant comments.

- I did have residents ask me about recycling. We did not have a bin on our floor though. I think my residents would have recycled had there been more access to it.
- Recycling bins should be available on each floor instead of just in the lobby.
- This year I live in [residence hall name deleted] and I have no idea where the recycle bins are. In [residence hall name deleted] there was an area on each floor for recycling. It was very convenient. I always encouraged my residents to recycle, even aluminum cans which may have contained alcohol.
- I am a huge advocate of recycling and it is sad for me to see that containers are not clearly labeled, or locations of containers are not posted by the university. Also, it concerns me that the housekeeping staff may not always be recycling what we put in the recycle bin. I think that there needs to be a bigger effort to make housekeeping staff comply with keeping recycled materials and trash separate. I also think OSU's campus should come up with a bright colored bin for all recyclables (like bright green) that would denote the bin as recyclables only and NOT a trash bin. Too many buildings on campus either don't have recycling bins or they have recycling bins that look the same as the trash cans except for a small recycle symbol. I think it is time that OSU makes changes in university culture to help the student body become more conscious of the environment and the benefits of recycling.

- I don't believe that [residence hall name deleted] recycled anything. Im pretty sure it all went into the trash.
- I feel that I encouraged many of my residents to recycle, but that I did not know enough about recycling to give them clear answers. Now that I live in a different building [residence hall name deleted], I see how few people really recycle on campus.
- I would use the bins and I saw a lot of my residents use the bins to recycle because we thought it was important but then it all got taken out with the trash. It really was disturbing that on such a large campus with so much trash, recycling isnt a bigger deal. It breaks my heart.
- It would be wonderful to see alum/plas receptacles on every floor, but particularly paper receptacles would be appreciated. To recycle cardboard I was forced to go to another dorm. This year, there is only one paper recycling bin and it is in the office, inaccessible to students [residence hall name deleted]. I'd really like to see more places where we can.
- There was little aversion to recycling in my hall, simply a lack of University/Hall involvement in its execution.
- There was no opportunity to recycle in [residence hall name deleted], but there was a recycling room in [residence hall name deleted]. However, it was often overflowing with recycling items, so I don't think it was picked up on a regular basis.
- I significantly recycled less when I heard a rumor that the housekeeping staff just threw the recycled items away when collecting them from my floor recycle area. I don't know if it is true but it definitely made me not care so much.
- I was told even though there were recycling bins in my hall that no matter what the bin said everything was thrown away and nothing was recycled, therefor no one ever through anything in the right labelled bin because nothing was being recycled.

- Though there were convenient and ample recycling bins for newspaper and plastics, these bins were eventually emptied into the trash instead of to recycling agencies. Also, RecycleMania was not offered at [residence hall name deleted].
- I am very concerned about the environment and am very glad to recycle when I am able. But, with the residence halls, there are either no recycling bins, or the ones that are available are turned into trash bins by other students. And, there is little or no incentive given by residence life or the University in general (except for Recyclemania) for students to recycle.
- The University doesn't embrace recycling in the way it embraces other initiatives. If bins are available, they are often hidden and allowed to overflow. There isn't a sense of responsibility in students about the waste produced. And we certainly don't recycle in University offices or dining halls in the way we could.
- [Residence hall name deleted] and [residence hall name deleted] towers are the exception rather than the rule when it comes to recycling on campus. Most of the buildings on south campus have virtually no program and many university buildings also lack proper facilities. For example, I have not seen recycle bins located in the newly constructed [building name deleted] nor the [residence hall name deleted]. There are not nearly enough recycle bins located near outdoor trash cans around campus. It seems like OSU does not value recycling very much on the whole. I find the lack of coordinated campus wide recycling education and facilities rather disappointing. I love OSU, but when it comes to being environmentally and sustainability minded, OSU is not nearly up to par with my personal values. Thank you for doing this study and working towards a better future.
- Recycling is not the solution, it's a response to a problem that does not target the wasteful extravagance of product packaging.

- I've heard that OSU doesn't actually recycle the materials they collect because housekeeping doesn't separate the materials from trash. I'm not sure if your research covers this, but this should be a huge factor for those who actually do recycle regularly.
- I'm not very confident that the recyclables in bins in my building got recycled. I wouldn't be surprised at all if they just made it to the trash, as the housekeepers did not seem to keep them separate and none of the bins in the trash room in the basement were ever used. The remained stacked nested in each other in the trash room.
- If the pleasant little children inhabiting the residence halls would be so kind as to recycle their empty containers, glass and/or aluminum, which contain their adult beverages, I think recycling on campus would increase ten-fold. All those poor cans and bottles just thrown about in the streets of OSU with no home, it makes me sad to know they have become unsightly garbage instead of sent to a plant to where they can be recycled into another alcoholic container that will probably end up being crushed on a college freshman's forehead in an attempt to impress a "totally slammin' chick" at a gathering with his chums to celebrate the advent of the weekly university money-machine making another appearance, the football game. Just imagine the impact OSU could have on the world of recycling if every can of cheap and trite Natty Light from last night's romp were placed gently into a recycling bin by the loving hand of every fraternity brother as they hold hands to signify unity in their commitment for academic success and service to the community.
- We need to have many more available options to recycle so it's not a special thing we do, but just second nature, a natural habit.
- Unless I am simply unaware, in [residence hall name deleted], we cannot recycle anything except for plastic containers. I am the Resident Manager, and I have tons of flyers and forms

and other papers that I would like to recycle, but there are no options for me! (Or at least, I am not aware of them!)

- the blue recycle bins were very small and were filled fast and not emptied often.
- I noticed that in [residence hall name deleted] they had the large units to recycle newspaper, plastic, aluminum, and mixed paper. It would be great if OSU Housing installed these units in every residence hall. Also, I have concerns as to whether the materials being placed in the recycling bins are actually being recycled. Perhaps to solve this problem OSU housing (or whomever is responsible for making sure the recyclable material goes where it is supposed to) could give a quarterly report of how much trash was recycled on campus.
- The recycling at Ohio State is a Joke. Bins were placed around [residence hall name deleted] last year and the custodial staff could be seen taking the trash bags from the recycling containers and throwing them in the regular trash. This didn't exactly instill confidence in OSU's recycling practices.

I like the idea of Recyclemania but it only attracts the attention of people overly concerned with recycling in the first place. It's not OSU's job to make students recycle, but it should make an attempt to inform students of the benefits of recycling and why we do it. Otherwise people think of recycling as a waste of their time and energy.

- If information about the recyclable collection process was highlighted, I would feel better. I did not trust that everything was being recycled, because I didn't understand the process
- A lot of the questions that I answered no to are because I didn't feel they applied. I was not aware of any recycling in the building besides the bins in each floor's trash room for aluminum. I was told that our building wasn't participating in RecycleMania and I did what I could to take my stuff to other buildings, but it was often too big of an inconvenience because I had nowhere

to store stuff in my room until there was a big enough collection to justify taking elsewhere.

- [Residence hall name deleted] did not recycle last year. The issue was brought up in hall council, and we were told that the building could not recycle because the university could not hire the extra staff in order to sort through the garbage in order to recycle. So even though we had recycling bins in the lobby, the contents were thrown in the trash.

- I think recycling in the residents is a phenomenal idea, and it's very convenient in my dorm. However, on several occasions my friends and I have seen the housekeeping staff mix the "recycling" materials in with the rest of the garbage. This is very discouraging and it in fact encourages people not to recycle.

Appendix E

Focus Group Invitation

An invitation was sent via e-mail to possible focus group participants. The invitation contained the following text:

“Hello, my name is Erin Neeb and I am honor student in the College of Human Ecology. I am conducting research to learn how The Ohio State University can improve recyclable materials collections on campus. In an effort to assess the recyclable materials collection programs in the residence halls at OSU, the input of student residents is important. To talk in-depth about your thoughts on the recycling program in (Morrill Tower/Neilwood Gables). The focus group will last approximately 60 minutes. Pizza will be provided during the focus group and all participants will be given a \$10 gift certificate. Please be aware that participation in this research is strictly voluntary and will not affect your status at the university. If you are interested in learning more about participation in this study, please contact me at neeb.4@osu.edu.

The Principal Investigator of this research, Dr. Golden Jackson-Mergler, can be contacted at Jackson-mergler.1@osu.edu or (614) 292-4575.

The Office of Responsible Research Practices can be reached at (614) 688-8457.

Thank you,

Erin Neeb”

Appendix F

Focus Group Script

Upon the start of each focus group session the following script was read. A discussion of the Talking Points (questions) followed the reading of this script.

“[Entering the room]:

[Students will be asked to help themselves to food and drinks as they enter the room. They will be informed that there will be no break in the discussion so they should try to make any phone calls or restroom breaks before the discussion begins.]

[Introduction (this will take place 5-10 minutes after the time at which the participants were asked to arrive)]:

Hello, I’m Erin. I will be moderating the focus group this evening. This is Richard and he will be helping me by making sure the discussion is audio recorded and he will also be taking some notes. At this time please turn all cell phones off or to silent settings.

Please be advised that you are being asked to participate in a research study. Your participation in the study is strictly voluntary and will in no way affect your status at the university. At this time I will be passing around a document to get your consent to participate in the study. Please read the document and sign it if you feel comfortable with the contents. If you have any questions or need assistance interpreting any part of the document, please let me know.

[Thank you and selection explanation]:

Thank you for coming to our discussion tonight. All of you are students that have live in an OSU residence hall. (Name the residence hall in which the students at this particular discussion lived.) We are here to listen and learn from you tonight. We are interested in your views on the recycling program in your residence hall last year. You are the only people who can tell us about the program from a resident's viewpoint.

[Tonight's purpose]:

OSU is a wonderful school, and we want the recycling program to be able to meet the needs of the students here. Our goal tonight is to learn what requisite knowledge you have of the recycling program in your residence hall, what perceptions you have of residence hall recycling, your level of satisfaction with the residence hall recycling program, and what would further motivate you to recycle.

[Ice-breaker]:

Let's go around the table and have everyone introduce themselves. Please tell us your first name, what residence hall you lived in last year, how many years you have been at OSU, and what your major is.

[Time limit]:

The discussion tonight should last about 60 minutes. We will not go longer than 90 minutes. There will not be a break, but please feel free to quietly help yourself to more food and drink

during the discussion. If you catch me looking at my watch during the discussion, please don't think of me as impolite, I will just be doing my best to make sure you leave on time.

[Ground rules]:

As we have such a short time to be together tonight, please try to stay on topic throughout the discussion time. Also, remember to speak one at a time. We are interested in hearing as many ideas and opinions tonight as possible. Try to remember that even if an idea may seem silly to you, it may be important to us. Speak your mind. We are not here to come to a consensus this evening. There is no right or wrong answer to any of the questions. Feel free to state your opinions even if they differ from those of other members of the group. All of you may ask questions of other members of the group. I am not the only one that is allowed to ask questions tonight. I will ask questions to facilitate discussion, but you may ask your own questions as well.

[Possible Questions to Facilitate Discussion]:

What do you think about the recycling program in (R1/ R2)?

When you place a recyclable item in a recycling bin on the OSU campus, do you feel confident that it actually gets recycled?

What is it about the recycling program that makes you believe it works or makes you think the items don't get recycled?

How would you guess that the residence hall recycling program at OSU compares to those at

other universities?

What do you think might encourage students to increase their recycling efforts in the residence halls?

Were you satisfied with the recycling program in your residence hall?

Why were you satisfied (or not) with the recycling program?

RecycleMania is a yearly competition in which universities compete to see which one can collect the most recyclable materials per student. The competition takes place over a ten-week period that begins in winter quarter and finishes in spring quarter. Not only did OSU compete in RecycleMania against other schools last year, but there was also a competition among the residence halls on campus to see which one could collect the most recyclable materials per capita.

Were you aware of the RecycleMania competition?

How did you become aware of RecycleMania?

Did you do anything to promote it?

Do you think it is an effective program?

What could be done to make it better?"

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